

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for multiple access in a radio communication system that employs time division multiple access techniques, said method comprising the steps of:

~~wherein a signaling channel is used for interchanging signaling messages, via a signaling~~
~~multiframe, between at least one fixed unit and a set of remote units located within the coverage~~
~~area associated with said fixed unit, the signaling channel being shared on a multiple access basis~~
~~by multiframe comprising a predetermined number of virtual identities less than the number of~~
~~said remote units and generated by a controller in the fixed unit, and said virtual identities being~~
~~shared on a demand assignment basis by the remote units, said method comprising the step of~~
~~changing, by said controller, the predetermined number of virtual identities for signaling~~
~~based on the level of occupancy of the signaling channel multiframe, and~~

~~a remote unit only using a virtual identity in the signaling channel multiframe by a remote~~
~~unit only when sending a message, and releasing the virtual identity after the message~~
~~transmission is complete.~~

2. (Previously Presented) The method for multiple access according to claim 1, wherein the number of virtual identities is less than the number of the remote units.

3. (Previously Presented) The method for multiple access according to claim 2, wherein the virtual identities are broadcast by a radio transmitter included in the fixed unit over a pilot channel in the downlink transmission direction.

4. (Currently Amended) The method for multiple access according to claim 3, wherein the pilot channel is received by a radio receiver included in a remote unit and is fed to said controller ~~means~~ included in the remote unit for recording the predetermined number of virtual identities for signaling.

5. (Currently Amended) The method for multiple access according to claim 4, wherein a virtual identity is selected by ~~the~~said controller ~~means~~ of the remote unit when the remote unit wishes to transmit a signaling message via a radio transmitter included in the remote unit, and the controller ~~means~~ of the remote unit inserts the signaling message into the virtual identity selected and the signaling message is received in a radio receiver included in said fixed unit.

6. (Currently Amended) The method for multiple access according to claim 5, wherein the signaling multiframe is received in the radio receiver of said fixed unit by ~~the~~said controller ~~means~~ of said fixed unit in order that the selected virtual identity will be marked as occupied and thereafter is broadcast in said pilot channel.

7. (Previously Presented) The method for multiple access according to claim 1, wherein the signaling multiframe is formed by a maximum number of virtual identities for signaling that is a function of the maximum duration permissible for said signaling multiframe.

8. (Previously Presented) A system for multiple access in a radio communication system which comprises at least one fixed unit having an associated coverage area within which is located a set of remote units, wherein the fixed unit and the remote units employ time division multiple access techniques to establish communications and to interchange signaling messages using a signaling multiframe, wherein the fixed unit comprises controller means for increasing or/and decreasing a predetermined number of virtual identities for signaling, which are independent of the true identities of the remote unit and generated by the controller means, based on the level of occupancy of the signaling multiframe, wherein a remote unit only uses a virtual identity in the signaling multiframe when sending a message and releases the virtual identity after the message transmission is complete.

9. (Previously Presented) The system for multiple access according to claim 8, wherein the number of the virtual identities is less than the number of the remote units.

10. (Previously Presented) The system for multiple access according to claim 9, wherein the fixed unit comprises a radio transmitter for broadcasting the virtual identities over a pilot channel in the downlink direction of the transmission.

11. (Previously Presented) The system for multiple access according to claim 10, wherein the remote unit comprises a radio receiver for receiving said pilot channel that is supplied to a controller means included in the remote unit for recording the predetermined number of virtual identities for signaling.

12. (Previously Presented) The system for multiple access according to claim 11, wherein the controller means of the remote unit selects a virtual identity when the remote unit wishes to transmit a signaling message, inserts the signaling message inside the virtual identity selected, and transmits the signaling message by a radio transmitter included in the remote unit so that a radio receiver included in the fixed unit receives the signaling message.

13. (Previously Presented) The system for multiple access according to claim 12, wherein the radio receiver of the fixed unit supplies the controller means of the fixed unit with the signaling multiframe, wherein the selected virtual identity is marked as occupied and thereafter is broadcast over the pilot channel.

14. (Previously Presented) A system for multiple access according to claim 8, wherein said controller means of the fixed unit generates a number of virtual identities for signaling as a function of the level of occupancy of said signaling multiframe, so that there is a maximum number of virtual identities for signaling which is a function of the maximum duration permissible for said signaling multiframe.

15-17. (Cancelled).

18. (Previously Presented) A method according to claim 1, wherein each virtual identity when in use is for sending signaling information with respect to a single one of said remote units.

19. (Currently Amended) A system according to claim ~~1~~8, wherein each virtual identity when in use is for sending signaling information with respect to a single one of said remote units.

20. (Previously Presented) A method according to claim 1, wherein a given remote unit may use different ones of said virtual identities for successive transmissions of signaling information.

21. (Currently Amended) A system according to claim ~~1~~8, wherein a given remote unit may use different ones of said virtual identities for successive transmissions of signaling information.

22. (Previously Presented) A method according to claim 1, wherein until release of a virtual identity by a particular remote unit the virtual identity cannot be used to send signaling information for any other remote unit.

23. (Currently Amended) A system according to claim ~~4~~8, wherein until release of a virtual identity by a particular remote unit the virtual identity cannot be used to send signaling information for any other remote unit.